



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/079,956 | 02/19/2002 | Roberto Padovani | 010536 | 9226 |
| 23696 | 7590 | 05/15/2006 | EXAMINER | |
| QUALCOMM, INC 5775 MOREHOUSE DR. SAN DIEGO, CA 92121 | | | HO, DUC CHI | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2616 | |

DATE MAILED: 05/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/079,956

Applicant(s)

PADOVANI ET AL.

Examiner

Duc C. Ho

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS; WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-11 and 14-41 is/are rejected.
- 7) ☒ Claim(s) 6, 12 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(b) that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, and 7-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Rich (US 5,940,452).

Regarding claim 1, Rich discloses dual mode radio subscriber unit having a diversity receiver apparatus and method therefore.

a receiver, including a plurality of receiver chains, for receiving a pilot channel and determining a channel condition of said pilot channel (a radio subscriber unit 702-fig.7 includes two antennas 114, 705 for receiving a carrier to interference ratio E_c/I_o of a pilot channel, see col. 22-line 4 to col. 23-line 42);

a control system for controlling receive diversity of said receiver by selecting a number of said plurality of receiver chains based on said determined channel condition (a controller 108-fig.7 controls the selection diversity receiver apparatus 704 based on the ratio E_c/I_o , see col. 22, lines 49-55).

Regarding claim 2, Rich discloses a determining step 606-fig.6 as to the ratio E_c/I_o above a threshold in association with selecting one of the antennas, see col. 13-line 50 to col.14-line 43, steps 204, 206, and col. 20-line 22 to col. 22-line 3

Regarding claim 3, Rich discloses a determining step 606-fig.6 as to the ratio E_c/I_o below a threshold in association with selecting both of the antennas, see col. 13-line 50 to col.14-line 43, steps 204, 206, and col. 20-line 22 to col. 22-line 3

Regarding claim 4, please see the rejection of claims 2, and 3. Wherein the serving signal of the first threshold drops below a S/N threshold than that of the second threshold of the ratio E_c/I_o .

Regarding claim 5, Rich's system is capable of being configured for adjusting a third threshold corresponding to a difference between the first and the second thresholds.

Regarding claims 7-11, these claims have similar limitations as claims 1-5, respectively. Therefore, they are rejected under Rich for the same reasons set forth in the rejection of claims 1-5.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

Art Unit: 2616

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

5. Claim 14-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rich, in view of Willey (US 6,505,058).

Regarding claim 14, Rich discloses all claimed limitations, except determining a first data bit of the QPCH received a mobile station in accordance with processing of one or more signals produced based on the determined receive diversity.

One skill in the art would recognize the advantage of employing a single bit message of QPCH based on a determined diversity to direct a mobile station so that the mobile station can configure itself to sleep mode or not in accordance with the data bit in order to save the battery power within a single charge.

Willey discloses a method for determining whether to wake up a mobile station. When the mobile station receives a QPCH bit representing by "On" (corresponding to 1), "Off" (corresponding to zero), and "not certain" (corresponding to erasure), wherein "On" means the base station clearly transmitted the bit, this also means that the mobile station should not in sleep mode, so that it can receive data from the base station, see col. 5, lines 56-67, and col.5-line 45 to.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine Rich with Willey.

The suggestion/motivation for doing so would have been to provide a mobile station a capability of using a single bit message of QPCH, transmitted form the base station, based on a determined diversity to indicate a mode in such a way a mobile station can configure itself to

Art Unit: 2616

sleep mode or not in accordance with the data bit in order to save its battery power within a single charge.

Therefore, it would have been obvious to combine Rich with Willey to obtain the invention as specified in claim 14.

Regarding claim 15, the system of Rich-Willey enables a mobile station in sleep mode when the determined first data bit is "Off".

Regarding claim 16, the system of Rich-Willey should indicate a mobile station not in sleep mode when the determined first data bit is "On" or "not certain".

Regarding claim 17, the system of Rich-Willey should direct its resource to decode the received information when the determined first data bit is "On" or "not certain".

Regarding claim 18, the system of Rich-Willey enables a mobile station in sleep mode when the determined second data bit is "Off".

Regarding claims 19-20, these claims have similar limitations as claims 14-15, respectively. Therefore, they are rejected under Rich-Willey for the same reasons set forth in the rejection of claims 14-15.

Regarding claims 21, this claim has similar limitations as claims 17-18. Therefore, it is rejected under Rich-Willey for the same reasons set forth in the rejection of claims 17-18.

Regarding claims 22, this claim has similar limitations as claims 17-18. Therefore, it is rejected under Rich-Willey for the same reasons set forth in the rejection of claims 17-18.

Regarding claim 23, the system of Rich-Willey is capable of determining a number of antennas for receive diversity based on ratio E_c/I_o of a pilot channel.

Regarding claim 24, this claim has similar limitations as claim 15. Therefore, it is rejected under Rich-Willey for the same reasons set forth in the rejection of claim 15.

Regarding claims 25-26, these claims have similar limitations as claims 17-18, respectively. Therefore, they are rejected under Rich-Willey for the same reasons set forth in the rejection of claims 17-18.

Regarding claims 27-31, these claims have similar limitations as claims 14-15, 23, 17-18, respectively. Therefore, they are rejected under Rich-Willey for the same reasons set forth in the rejection of claims 14-15, 23, 17-18.

Regarding claim 32, this claim has similar limitations as claims 14-17. Therefore, it is rejected under Rich-Willey for the same reasons set forth in the rejection of claims 14-17.

Regarding claim 33, this claim has similar limitations as claim 17. Therefore, it is rejected under Rich-Willey for the same reasons set forth in the rejection of claim 17.

Regarding claims 34-35, these claims have similar limitations as claims 32-33, respectively. Therefore, they are rejected under Rich-Willey for the same reasons set forth in the rejection of claims 32-33.

Regarding claim 36, this claim has similar limitations as claim 32. Therefore, it is rejected under Rich-Willey for the same reasons set forth in the rejection of claim 32.

Regarding claim 37, this claim has similar limitations as claim 17. Therefore, it is rejected under Rich-Willey for the same reasons set forth in the rejection of claim 17.

Regarding claim 38, this claim has similar limitations as claim 17. Therefore, it is rejected under Rich-Willey for the same reasons set forth in the rejection of claim 17.

Regarding claim 39, this claim has similar limitations as claim 32. Therefore, it is rejected under Rich-Willey for the same reasons set forth in the rejection of claim 32.

Regarding claim 40, this claim has similar limitations as claim 17. Therefore, it is rejected under Rich-Willey for the same reasons set forth in the rejection of claim 17.

Regarding claim 41, this claim has similar limitations as claim 17. Therefore, it is rejected under Rich-Willey for the same reasons set forth in the rejection of claim 17.

Allowable Subject Matter

6. Claims 6, 12-13 are objected to as being independent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lee (US 2003/0063579); Willey (US 6,138,034); Bruckert et al.(US 6,023,615); Kobayashi (US 6,721,564); Hottinen et al.(US 2002/0009156); Proctor, JR. et al. (US 2004/0090931) are cited to show method and apparatus for receive diversity in a communication system, which is considered pertinent to the claimed invention.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc Ho whose telephone number is (571) 272-3147. The examiner can normally be reached on Monday through Friday from 7:00 am to 3:30 pm.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin, can be reached on (571) 272-3134.

Art Unit: 2616

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner



Duc Ho

05-11-06